Integrated Pest Management in King County Government

A Status Report Through the year 2000 on the Implementation of the King County IPM Executive Order

Prepared by the King County IPM Steering Committee
July 2001

ACKNOWLEDGMENTS

Primary authors of this report were Ann Peacock, Dave Galvin, Lisa Niehaus and Annette Frahm from the Local Hazardous Waste Management Program in King County.

The IPM Steering Committee is responsible for coordinating implementation of the IPM Executive Order in King County government agencies. Several members of the Steering Committee reviewed and made valuable suggestions to this report. The Local Hazardous Waste Management Program in King County facilitated the process and provided technical assistance. Table 1 lists all the participants in the IPM Steering Committee during 2000.

Table 1. King County IPM Steering Committee Participants

Department/Division	Name	Area of IPM expertise/interest
DCFM[1]/Airport	Christine Groubert	Landscape management
DCFM/Facilities	Jim Nitz	Landscape management
DDES[2]/Land Use Services	Dan Douglas	Sensitive areas
DNR[3]/Solid Waste	Lauren Cole	Solid Waste
DNR/WLRD[4]/Drainage Services	Dan Willott	Stormwater management
DNR/WLRD/Drainage Services	Larry Gettle	Stormwater management
DNR/WLRD/Hazardous Waste Mgmt.	Annette Frahm	Communications
DNR/WLRD/Hazardous Waste Mgmt.	Ann Peacock	Technical assistance
DNR/WLRD/Hazardous Waste Mgmt.	Dave Galvin	Policy Issues
DNR/WLRD/Hazardous Waste Mgmt.	Lisa Niehaus	Technical assistance
DNR/WLRD/Noxious Weeds Program	Jane Wentworth	Noxious weed management
DNR/WTD[5]/Renton Reclamation Plant	Chuck Colpitts	Landscape management
DNR/WTD/Renton Reclamation Plant	Jim Laremore	Landscape management
DNR/WTD/Renton Reclamation Plant	Robert Collins	Landscape management
DNR/WTD/SWEES[6]	Fauna Nopp	Landscape restoration
DNR/WTD/West Point Off-site	Leroy Tanzer	Landscape management
DNR/WTD/West Point Reclamation Plant	Andrew Sinclair	Landscape management
DNR/WTD/West Point Reclamation Plant	Qua Van Phan	Landscape management
Transportation/Road Services	Bill Kernan	Vegetation management
Transportation/Road Services	Dolores Walker	Vegetation management

Transportation/Road Services	Jim Bjorgen	Vegetation management
Transportation/Transit	Cathy Johnson	Environmental Specialist
Parks	Terry Brady	Landscape management
Parks	James Davis	Landscape management
Public Health/Environmental Health	Penny Chencharick	Environmental health

[1]Dept of Construction & Facility Management
[2]Dept of Development & Environmental Services
[3]Dept of Natural Resources
Division
[4]Water and Land Resources Division
[5]Wastewater Treatment Division
[6]Surface Water Engineering & Environmental Services

EXECUTIVE SUMMARY

The King County government has completed the first full year of implementation of an Executive Order on Integrated Pest Management (IPM). County Executive Ron Sims issued the IPM Executive Order in November, 1999, requiring that all departments develop and implement IPM programs for their own internal operations and also requiring the phase-out of use of certain "most hazardous" pesticides by June 30, 2000.

IPM is a well-established, holistic approach to managing pests and landscapes. It seeks to prevent or address pest problems by employing a wide range of strategies, generally using chemical pesticides as a last resort. The IPM approach considers impacts of management methods on the environment and public health. Various county departments have been employing some IPM practices for years, such as the Parks System, Roads Services Division and Noxious Weed Program.

The King County IPM policy and Executive Order were developed as part of the county's response to the listing of local populations of Chinook salmon as threatened under the Endangered Species Act (ESA). Pesticide use is one of many factors that may be affecting salmon decline. The county's new NPDES stormwater permit will also require greater efforts to keep pesticides out of local surface waters.

We have made good progress in the last year in implementing the Executive Order. Some highlights are:

Reduction in pesticide use

In 1999 King County used 8,800 pounds (more than four tons) of pesticides in its operations, 88% of which were in the "most hazardous" (Tier 1) category targeted for phase-out. *Overall, the total use of pesticides decreased 50 percent from 1999 to 2000.* The use of Tier 1 products decreased 62 percent, while use of Tier 2 products increased by 34 percent as employees shifted somewhat to less-hazardous chemicals.

County staff achieved this reduction in pesticide use through significant changes in management practices. For example:

- They increased the use of such mechanical tools as flame weeders and string weeders, and did more hand weeding.
- Substantially larger amounts of mulch were laid down for weed suppression.
- They actively explored alternative methods, practices and products.
- They developed a tolerance for a greater number of weeds in the landscape—although this prompted an increase in complaints from a public accustomed to a more manicured look.

Many of these options were found to be more labor intensive; it takes longer to hand weed or use a mechanical mower than to broadcast-spray a herbicide.

Pesticide disposal

Many county departments cleaned out pesticides that they would not need or would no longer be able to use. These departments took advantage of a free pesticide collection and disposal event offered by the Washington State Department of Agriculture. Over *2,800 pounds of products* such as Diazinon, Dursban and weed-and-feed products were removed from storage in county facilities. County employees saved thousands of dollars in disposal costs by taking advantage of this free state service.

Some of the other activities that took place in implementing the Executive Order include:

- An IPM Steering Committee was formed to communicate, coordinate and provide guidance for implementation. It is composed of staff from a number of different county departments and divisions with a role in managing landscapes.

- We created an e-mail Info-Share to share expertise, solve problems, announce events and otherwise communicate.

- A new web site (www.metrokc.gov/hazwaste/ipm) was created to make available a wide varity of program information.

- We researched and provided information on local training opportunities. We also provided limited financial assistance for development of two local IPM seminars and for some county staff to attend trainings.

- We used product demonstrations to assess the effectiveness of various weed management tools, such as a steam weeder, flame weeder and "weed wrench."

- We recommended changes in contract language for contractors working on county property. We hope this will reduce pesticide use over time as contracts are renewed.

- The Executive Order called for phase-out of "Tier 1" pesticides, those considered to pose the greatest hazard to human health and the environment. An exception process reviewed requests for exceptions to the phase-out and allowed continued use of some Tier 1 products for noxious weed and wasp control.

What is needed for future success

We have learned valuable lessons during this first year of implementation. Our successes and challenges lead us to several recommendations for the future.

1. Management support is necessary.

King County managers and directors need to both understand IPM and commit to IPM as a strategy for maintaining county grounds. It would be helpful for County Executive Sims to communicate his commitment to IPM to county management.

2. Training is extremely important. Support and funding for training are needed.

Training in IPM concepts and practices is important for:

- Staff responsible for managing landscapes; especially important is training on cultural practices; identification and life cycles of diseases, insects and weeds; and strategies for successful management of these pests.
- Staff and contractors designing landscapes, so they know more about how to develop healthy, pest-resistant landscapes.
- Managers so they can serve as a resource and support for staff.

3. More grounds maintenance staff are needed.

Hand-pulling and mechanical weed control methods take more staff time, plain and simple. Increased labor cost was the number one impact experienced by many departments in implementing the IPM Executive Order.

In a time of tighter budgets, it is important to remember our commitment to the ESA and protection of salmon and surface water. More staff are needed to improve cultural practices (such as applying larger quantities of compost or other organic materials), monitor for pests, manage weeds with mechanical means, and keep track of which strategies are most successful. This requires a greater commitment to funding.

4. Landscape design specifications need to change.

We are stuck with many old landscapes that require intensive maintenance. Even new facilities are being designed and built still using old, high-maintenance landscape plans. Those involved in landscape design need to understand IPM so they can design landscapes that will not require large amounts of pesticides to maintain successfully. This will cost more up front in project planning, but should save money and effort over the long run.

Staff who will be maintaining landscapes should be involved in review of design plans at an early stage in order to offer perspectives on maintenance issues.

5. Better record-keeping is needed on pesticides and IPM.

Obtaining a baseline of pesticide usage among the county's departments and diverse programs proved to be a challenge. Record-keeping and reporting are scattered; they need to be more consistent. Information is needed not only about pesticide use but also about the successes, failures, and lessons learned in implementing IPM in King County. All those who spray should be required to keep records, whether or not they are licensed public applicators.

6. Research on alternatives is essential to find effective new products and techniques.

King County needs to follow Seattle's lead and carry out pilot projects to test possible methods to improve cultural practices and control weeds, diseases and insects. Rigorous testing would help determine the advantages and disadvantages of various methods, and how to use them in the most successful way.

7. A public campaign raising awareness of IPM should be developed.

As county staff tolerate more weeds as one means to reduce pesticide use, departments have received complaints in 2000 for what is perceived as less tidy maintenance of various county properties.

Widespread public support exists for the county's IPM efforts; a countywide survey in 2000 found that 78 percent of residents supported a county plan to reduce pesticide use along roads, in parks and on other public land. The public needs to understand what King County is doing to implement IPM and its impacts, ranging from water quality and fish protection to a less manicured, more "natural" landscape. The campaign should also explain how citizens can practice IPM in their own properties in order to protect themselves and their environment.

8. Contractors working on county property need to follow the same mandate as county staff.

Those who manage these contracts need to review existing contract language for requirements related to landscape management. New contracts should include an IPM approach, and existing contracts should be amended if practical.

9. Continued exploration of noxious weed management techniques is needed.

We are required by state law and local weed board mandates to manage certain species of plants for public health, economic and environmental reasons. King County's noxious weed program has had a strong IPM policy for years. Yet in many cases non-chemical control methods only go so far and use of certain hazardous herbicides is still needed. We need to continue to explore cultural options and less-hazardous chemical tools to manage noxious weeds while recognizing the challenge these weeds present.

King County has made great progress implementing IPM across multiple departments. King County is a leader among local governments in demonstrating this "salmon-friendly" approach to its own operations. We have faced many challenges and look forward to the future. This is a great, ongoing success story as the region adapts to a new way of doing business that protects Chinook salmon while also fostering further economic development and quality of life.

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ORIGINS

King County manages a variety of public lands, rights of way and environmental programs. County personnel maintain road shoulders, park-and-ride lots, parks, open spaces and stormwater detention ponds. They also control noxious weeds, restore streamside habitats, regulate development and reduce hazardous chemicals. In the course of their work, county staff must manage unwanted vegetation, prevent stinging insects from harming employees and the public, treat tree diseases or give technical advice to others about such practices. That is, the county has to address "pest"[1] issues as part of managing its facilities and public lands.

Certain plants that are unwanted, like the noxious weed tansy ragwort, or that cause problems are "pests" referred to as weeds.

Previous progress

For years, King County has been a leader in using pest management practices aimed at public safety and environmental protection. For example:

- The King County Parks System has developed practices for maintaining county-owned parklands that have virtually eliminated the use of pesticides.
- Over decades, King County Roads Services Division has incorporated practices to manage roadside vegetation that greatly reduced its herbicide use.
- King County's noxious weed control program developed an official Integrated Pest Management[2] policy long before the effort described in this report.

Yet environmental and public health sensitivities continue to increase—from concern about possible health effects of spraying pesticides to possible impacts of pesticides on threatened salmon. King County and other local governments have a renewed interest in finding ever-safer tools for managing pest problems.

[1] "**Pest**" refers to any insect, rodent, weed, fungus or other form of plant or animal life that adversely interferes with the aesthetic, health, safety, environmental or economic goals of a jurisdiction. "Pest" is a generic term that includes unwanted or problematic vegetation often referred to as a "**weed**." Similarly, a "**pesticide**" is the generic term for a chemical agent that repels, kills or otherwise reduces levels of a targeted pest; "pesticide" is therefore the umbrella term which includes such chemical products as herbicides, insecticides and fungicides.

[2] **Integrated Pest Management** or "**IPM**" is a coordinated decision-making and action process that uses the most appropriate pest control methods and strategies in an environmentally and economically sound manner to meet agency programmatic pest management objectives [17.15.010 *RCW*]. IPM is an approach to prevent or address pest problems that employs a wide variety of strategies and that in the process minimizes the use of chemical pesticides.

Salmon and the ESA

In 1999 local populations of Chinook salmon were listed as threatened under the Endangered Species Act ("ESA"). This action spurred efforts to address the many factors affecting decline for these fish. One factor is pesticide use, which could affect salmon if these chemicals get into their habitats at problematic levels.

The Tri-County ESA Response Program asked a task force to develop recommendations for ways to reduce pesticide use. The task force, representing King, Snohomish and Pierce counties, the cities of Seattle, Bellevue and Tacoma, the Muckelshoot Indian Tribe and local environmental groups, developed a generic Integrated Pest Management policy[3], which could be adopted by any local jurisdiction. The task force also developed a more detailed set of IPM guidelines to serve as the basis for a local jurisdiction's IPM program tailored to its own operations.

IPM Executive Order

On November 5, 1999, King County Executive Ron Sims signed an Executive Order "requiring certain King County departments, offices and agencies to conduct pest and vegetation management activities in accordance with the Tri-County IPM Model Policy and supporting Guidelines." The Executive Order also required "that such departments, offices and agencies phase out the use of certain specified materials by June 30, 2000." [The full text of the Executive Order is included with this report in the appendix.]

Using beneficial insects instead of insecticides can maintain the diversity of the insect population and control pest species. Using insecticides can reduce all insect populations leading to a pesticide dependent landscape.

The IPM Executive Order called for the formation of an IPM Steering Committee representing "all King County agencies that conduct pest and vegetation management activities in the course of their assigned duties," to coordinate implementation of the Executive Order and "agency-specific" IPM programs.

Tier 1 pesticides. The IPM Executive Order called for the phase-out, "to the maximum extent practicable," of use of pesticides listed in Tier 1 of a set of hazard-assessment tables. The tables, developed originally for the City of Seattle, categorized pesticides into groups, or tiers, based on their hazard to human health and the environment.

[3] The Tri-County IPM model policy and guidelines are available in full at www.metrokc.gov/hazwaste/ipm.

The Tier 1 pesticides, considered of "highest concern, priority for phase-out," included the most hazardous products still in use or storage at either the City of Seattle shops or within King or Pierce County operations. Tier 1 products included such herbicides as Casoron® (dichlobenil), Garlon 3A® (triclopyr), 2,4-D, various "weed-and-feed" products (2,4-D, MCPP, dicamba combinations), and such insecticides as diazinon, Dursban® (chlorpyrifos) and malathion. The full tables can be accessed at the IPM web site (see footnote 3).

King County employees have been working for a year to implement the IPM Executive Order across the county's diverse operational programs. This report summarizes the first full year of experience: what has been done, what results have been achieved to date, and what we've learned in the process.

IPM PROGRAM IMPLEMENTATION

King County IPM steering committee

The Executive Order asked King County agencies to coordinate implementation of their IPM programs through participation in an IPM Steering Committee. The Local Hazardous Waste Management Program (LHWMP) was asked to facilitate the process and provide technical assistance. The IPM Steering Committee was formed in January 2000 with representatives from all county departments and divisions that are managing pests and vegetation as part of their ongoing work.

Lawns with up to 20 percent weed cover are still aesthetically pleasing to most people.

The IPM Steering Committee has proved to be a valuable forum to share information and coordinate activities. Its membership cuts across many departments at a field staff level. Work responsibilities of staff on the committee are varied, providing a variety of perspectives. Some agencies have asked that the gardeners and spray technicians participate in the meetings; other agencies send management level members.

During our first year we organized the committee and looked for ways to make the committee useful to the agencies involved. As we have progressed we've been able to share expertise on specific problems. For example, a gardener expressed concern over a proposed landscape plan for a new capital project that he thought would be difficult to maintain properly without the extensive use of herbicides. Committee members with expertise as planners and landscape architects reviewed the plans and made some comments that could help resolve the issues.

One important part of each committee meeting has been around-the-table sharing of "one thing I did since the last meeting that relates to IPM." Those who have had success with flame weeders, for instance, are able to share the successes and limitations of these tools with agencies that have not yet tried them. This conversation has allowed us to learn about each other and the work we do; it has helped break down barriers between departments.

E-mail Info-Share

In order to reach a broader audience than Steering Committee members, we developed an e-mail "Info-Share" forum. It is used to share expertise, solve problems, announce IPM-related events, and otherwise communicate with each other. Anyone with an interest can participate. The e-mail is produced four or more times per year and sent to anyone who wishes to receive it. It is sent primarily to government staff within King County, and also to staff in the City of Seattle, several suburban cities and as far away as San Francisco.

Questions presented during committee meetings are posted in the Info-Share as are others asked by e-mail recipients. Answers and ideas that are sent in are then posted in subsequent editions. Details of available training, research and demonstrations are also posted. In order for this information to be available long term, the Info-Share is archived on our web site.

IPM web site

We developed a web site, www.metrokc.gov/hazwaste/ipm/, for King County's IPM program. It contains a wealth of program information. In addition to the IPM Info-Share archive, it includes the text of Tier One exception requests and decisions, a calendar of IPM-related events, and links to other resources. The IPM Executive Order, Policy and Guidelines are posted as are the Tier Tables and details about how they were created and how they should be used.

Training

IPM requires a different approach from traditional landscape maintenance and pest control, including frequent assessment and reappraisal of sites and conditions. Training allows staff to learn more about managing pests (including weeds) of concern. It is important to keep up to date on new techniques, alternative tools and chemicals as well. Training helps move people from the old way things have always been done to more innovative approaches to reduce or eliminate the use of hazardous chemicals.

Alternative tools include heat treatment to kill weeds.

The King County IPM Executive Order does not provide funding for its implementation, so we have been limited to providing information about training available in the area. We review local trade publications, gardening magazines and college course schedules to gather information on IPM-related classes and seminars, as well as network with contacts at WSU Cooperative Extension, nurseries, the landscape industry and experts in the field. This information is detailed in the Info-Share forum, on the web site, and at the Steering Committee meetings.

An important annual IPM training event is the Green Gardening Program's seminar on *Integrated Pest Management Strategies for Professional Groundskeepers*, now in its tenth year. King County Cooperative Extension and LHWMP help run and fund the Green Gardening Program, including this event. The City of Seattle's "Pesticide Recertification Seminar" seminar is also available. Geared towards government staff, it is well attended by county and suburban city grounds managers and staff. The LHWMP was able to assist by paying part of a speaker's

fee at the 2000 City of Seattle seminar. It also provided scholarship funding for three county staff who did not have training funds available to attend an additional seminar on pesticides.

Alternative research and demonstrations

Product demonstrations provide an opportunity to find out how things work and whether they might work in our situations without having to purchase the equipment first. King County acquired a demonstration model of the Waipuna Steam Weeder from New Zealand for several months during 2000. This machine uses steam and hot water to kill weeds. Parks System staff hosted the machine and tested it at various locations. We determined that it was quite effective at "cooking" certain herbaceous weeds in some applications, but its bulkiness, limited application and high cost didn't warrant a purchase at this time.

Park System and Roads Services staff attended demonstrations of a locally-developed adaptation of a pressure washer to simulate the steam weeder at a much cheaper price and greater portability. The County and City of Seattle are continuing to test this promising tool and to work with the local manufacturer on refinements.

County staff involved in IPM implementation also tested other alternative tools, such as:

- A "micro-spray" wand for applying very small amounts of pre-mixed herbicide in targeted, spot-spray applications.
- Flame weeders that "cook" unwanted vegetation using an adapted propane torch wand.
- A "weed wrench" for manually extracting large pest bushes such as gorse and Scot's broom.

A demonstration model of the Waipuna Steam Weeder was evaluated by King County and City of Seattle staff during 2000.

Some more "exotic" biological pest controls are also being employed and/or tested by the county. Cinnabar moth larvae (*Tyria jacobaeae)* and a type of flea beetle are transferred from certain "nursery" stocks of tansy ragwort, a priority noxious weed that wreaks havoc in agricultural lands, to other stands of the plant in order to reduce their number and viability.

We value the relationship we've developed with the City of Seattle's Environmental Management Program, which has staff and budget to provide product demonstrations and to research alternative weed and pest control techniques. The City has invited County employees to its demonstrations and shared its data and research conclusions. In turn, County staff have shared their information and experiences.

Contracted landscape services

Committee members worked to institute greater IPM approaches and reduce pesticide use by contractors working on county property. We recommended changes in contract language that will, over time, lead to reduced use of pesticides as contracts are renewed or new contracts let. For example, we recommended eliminating contract language that requires the regular use of weed-and-feed products on turf.

Innovative hand tools, like the weed wrench pictured above, are an alternative to the use of Tier 1 broadleaf weed killers.

Exceptions to Tier 1 phase-out

The IPM Executive Order called for the phase-out of use of Tier 1 pesticides by June 30, 2000, "to the maximum extent practicable."

Tier 1 pesticides are those considered of highest concern because of their hazard to human health and the environment. IPM doesn't rule out the use of all pesticides. There may be limited situations when using a Tier 1 product is still deemed necessary, for example:

- There are no other feasible alternatives.
- Legal, health or safety considerations are present and paramount.
- A unique landscape is at risk.

The Steering Committee members felt that the ability to continue to use any Tier 1 products should be limited and require some form of advance "approval" with appropriate conditions. Four members of the committee were selected to review requests for exceptions to the phase-out; all have extensive landscape management experience and all are licensed public operators. This subcommittee developed criteria, issues to consider, a relatively simple process to follow, and an application (see appendix) that would allow county employees to present their case for why a Tier 1 product was needed.

Two types of exceptions were recognized. One-time-only exceptions are for a single use of a Tier 1 pesticide, for example for an emergency outbreak of a pest. Program-wide exceptions, such as using a certain Tier 1 herbicide as the only sure way to combat a particular noxious weed, would apply across all departments and would be reviewed/renewed annually.

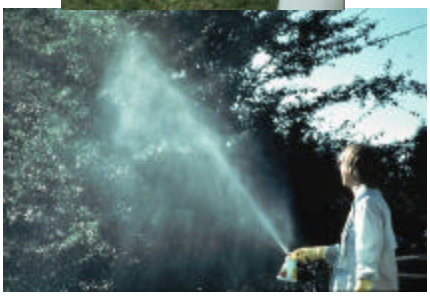
All requests were required to include:

- Management goals and objectives for the site.
- Description of the problem.
- Proposed best management practices to minimize the pesticide's potential hazard.
- Evaluation of all feasible alternatives to Tier 1 products, including their costs.
- Legal, public health or safety considerations.

Each subcommittee member independently reviewed each application, product label and other supporting documents. Reviewers used as a reference the criteria used to rank pesticide products into the tier tables (see www.metrokc.gov/hazwaste/ipm). Reviewers asked such questions as:

- Why is the chemical on the Tier 1 list (e.g., fish toxicity, carcinogen)?
- How does this relate to the proposed use of the product (e.g., are there ways to mitigate for the hazard that triggered the Tier 1 designation)?
- Should the pest tolerances, or perceptions of the problem, change (for example, does the landscape need to be maintained at current levels)?

The subcommittee attempted to reach consensus on a recommendation for each exception request. The recommendation—to approve the request, approve with conditions, or deny the request—was forwarded to the Hazardous Waste Program manager for final decision. All decisions were posted on the IPM web site.



Using spot spraying versus broadcast applications where appropriate can reduce pesticide use.

During this first year there were only ten requests for the use of Tier 1 products after the June 30 phase-out date. Five requests were for herbicides, all related to control of specific noxious weeds where other control methods have not been effective. Four were approved with conditions; the fifth was denied because the product label did not allow for commercial use. Five requests were for use of Tier 1 insecticides, all related to control of wasps and their nests. Two were approved with conditions; the other three were denied because the product label did not allow for outdoor use on wasps. Additional details can be found at www.metrokc.gov/hazwaste/ipm.

Pesticide use

To implement the IPM Executive Order it was essential to have an assessment of current practices, including what pesticides King County employees were using, in what quantities and for what purposes. Gathering this information proved to be a challenge for everyone involved. In most situations where county employees use pesticides, there is no Washington State Department of Agriculture (WSDA) requirement for them to be licensed. And if the person doing the application isn't licensed, there is no requirement to keep records such as spray logs.

King County has also not required non-licensed operators to keep logs of pesticide use and has not required county employees applying products labeled for "general use" to be licensed if not

required by WSDA. As a result, we found that our records of the pesticides used by county employees exist primarily only for those areas where a WSDA license is required.

To help get a handle on what chemicals were being used all the departments and divisions that do landscape management were asked to prepare inventories of annual pesticide use. Table 2 (below) summarizes the pounds of pesticides used in 1999 and 2000. Tables 3 and 4, in the appendix, gives detailed use for 1999, our baseline year, and for 2000, the first year of Executive Order implementation. Those tables include the amounts used, application method and type of landscape.

Table 2. Summary of Pesticide Use in 1999 and 2000*

	Pounds Tier 1 Used	Pounds Tier 2 Used	Pounds Used Not Tier Rated	Total Pounds Used
1999 herbicides	7,600	1,100	50	8,700
2000 herbicides	2,900	1,500	0	4,400
1999 insecticides	41	0	33	74
2000 insecticides	0.5	0	2	3
1999 fungicides	0	0	0	0
2000 fungicides	0	0	0	0
1999 other	0	0	1.3	1.3
2000 other	0	0	0	0

*For details of pesticide use see Tables 3 and 4 in the appendix.

A further challenge was the quantification of product use, including the various states (solids, granules, liquid concentrates, mixes, aerosols) in which products are sold or applied. The amount of product used was reported in various units including tablespoons, ounces, gallons and cups. An attempt, admittedly crude, was made to standardize quantity units so that a rough estimate could be obtained of total quantities of pesticides used. For example, all liquid units were converted to gallons, then to pounds by using the conversion factor of 8.34 (the number of pounds one gallon of water weighs) and rounded to two significant figures.

If the name of a product does not appear on the Tier tables but has the same active ingredient(s) as one that does, it was assumed to have the same risks and was listed on Tables 3 and 4 with an *. If the name and active ingredients aren't on the Tier tables at all, the product was listed as not rated.

In 1999 King County used 8,800 pounds (more than four tons) of pesticides in its operations, 88% of which were in the "most hazardous" (Tier 1) category targeted for phase-out. Overall, the total use of pesticides decreased 50 percent from 1999 to 2000. The use of Tier 1 products decreased 62 percent, while use of Tier 2 products increased by 34 percent as employees shifted somewhat to less-hazardous chemicals. The only reported use of Tier 1 products after the June 30th deadline was for the control of noxious weeds. Brush-B-Gon®, Garlon 3A® and Transline® were approved for use through the exception process to control tansy ragwort, hawkweed, knapweed, giant hogweed and purple loosestrife, all in very small amounts.

County staff achieved this reduction in pesticide use through significant changes in management practices. For example:

- They increased the use of such mechanical tools as flame weeders and string weeders, and did more hand weeding.
- Substantially larger amounts of mulch were laid down for weed suppression.
- They actively explored alternative methods, practices and products.
- They developed a tolerance for a greater number of weeds in the landscape—although this prompted an increase in complaints from a public accustomed to a more manicured look.

Many of these options were found to be more labor intensive; it takes longer to hand weed or use a mechanical mower than to broadcast-spray an herbicide.

Pesticide disposal

Many county departments assessed the products that they had used in the past and had in inventory, and concluded that they would no longer need many of them nor be able to use them. These departments took advantage of an excellent service offered by the Washington State Department of Agriculture, which conducts pesticide collection/disposal events throughout the state. These collection events allowed for the safe disposal of unusable, stockpiled or unwanted pesticides, free of charge. Over *2,800 pounds of products* such as Diazinon, Dursban and weed & feed were removed from storage in county facilities. County employees saved thousands of dollars in disposal costs by taking advantage of this free state service.

WHAT WE'VE LEARNED/WHAT IS NEEDED

We have learned valuable lessons during this first year of implementation. Our successes and challenges lead us to several recommendations for the future.

What we've learned	What is needed
1. IPM is complicated.	**1. Management support is necessary.**
IPM is a different way of thinking, a holistic approach to management of landscapes and pests. To be successful, IPM requires: • Greater understanding of the "pest" issue. • Establishment of tolerance thresholds and monitoring to know when thresholds have been surpassed. • A different approach to landscape design in order to develop more pest-resistant, lower maintenance plant communities. • Knowledge about how to **prevent** pest problems through developing healthy landscapes, rather than **treating** problems especially via chemical means.	King County managers and directors need to both understand IPM and commit to IPM as a strategy for maintaining county grounds. It would be helpful for County Executive Sims to communicate his commitment to IPM to county management. This group should also receive information or training on IPM principles and practices so they can be a resource to their staff and others.
2. Training is extremely important.	**2. Support and funding for training are needed.**
We have made important steps in helping staff obtain training related to IPM in landscaping, including our own in-house workshops and scholarships for staff who might not otherwise be able to attend certain trainings. Successful IPM implementation will require continued commitment to training in specific IPM techniques and approaches.	Training in IPM concepts and practices is important for: • Staff responsible for managing landscapes. Especially important is training on cultural practices; identification and life cycles of diseases, insects and weeds; and strategies for successful management of these pests. • Staff and contractors designing landscapes, so they know more about how to develop healthy, pest-resistant landscapes. • Managers so they can serve as a resource to staff.

3. IPM, at least in the short term, can result in more labor-intensive requirements.	**3. More grounds maintenance staff and funding are needed.**
Hand-pulling and mechanical weed control methods take more staff time, plain and simple. The various departments implementing the IPM executive order have all experienced increased labor demand; in fact, increased labor cost was the number one impact experienced by many departments in implementing the IPM Executive Order.	More staff are needed to improve cultural practices (such as applying larger quantities of compost or other organic materials), monitor for pests, manage weeds with mechanical means, and keep track of which strategies are most successful. This requires a greater commitment to funding.
4. Landscape design presents serious challenges and is important for successful IPM.	**4. Landscape design specifications need to change.**
We are stuck with many old landscapes that require intensive maintenance. Even new facilities are being designed and built still using old, high-maintenance landscape plans. It will take us many years and many capital dollars to reconfigure old designs to support a low-maintenance, pest-resistant, "right plant/right place" landscape. The landscape surrounding the West Point Treatment Plant is an example of excellent planning and design using IPM from the very beginning.	Those involved in landscape design need to understand IPM so they can design landscapes that will not require large amounts of pesticides to maintain successfully. Projects designed from the ground up with IPM in mind are likely to be successful with minimal chemical intervention. This will cost more up front in project planning, but should save money and effort over the long run. Staff who will be maintaining landscapes should be involved in review of design plans at an early stage in order to offer perspectives on maintenance issues.
5. It is difficult to get good data on pesticide usage.	**5. Better record-keeping is needed on pesticides and IPM.**
Obtaining a baseline of pesticide usage among the county's departments and diverse programs proved to be a challenge. Record-keeping and reporting are scattered. A rough inventory was developed as a starting point to assess types and quantities of products used within the county.	More consistent record-keeping is needed, not only about pesticide use but also about the successes, failures, and lessons learned in implementing IPM in King County. All those who spray should be required to keep records, whether or not they are licensed applicators.
6. We *can* manage our landscapes and pests using fewer and less-hazardous pesticides.	**6. Research on alternatives is essential to find effective new products and techniques.**
King County's world didn't end on July 1, 2000, with the restriction in use of Tier 1 products, despite dire warnings voiced by some industry advocates. King County's world	King County needs to follow Seattle's lead and carry out pilot projects to test possible methods to improve cultural practices and control weeds,

got more complicated, maybe, and challenging to employees charged with maintaining facilities, roads and landscapes. But our staff rose to that challenge and in the process made King County's environment safer. Use of alternative products and techniques has worked to address many landscape management issues. For example, more extensive use of bark mulches has greatly reduced the need for pre-emergent herbicides in shrub beds.	diseases and insects. Rigorous testing would help determine the advantages and disadvantages of various methods, and how to use them in the most successful way. Because "new and improved" products are continuously available for purchase, an ongoing process will be needed to determine their hazard and update the Tier tables.
7. Public expectations of landscape maintenance need adjustment.	**7. A public campaign raising awareness of IPM should be developed.**
Weed tolerances in an IPM approach will not be zero in most situations, except in hazardous areas such as electrical substations and fuel storage where no vegetation can be safely allowed. But what standards should be kept for a Transit park-and-ride lot or a very visible park entrance? Will the users or neighbors accept a less manicured, more "natural" landscape? Departments have received complaints in 2000 for what is perceived as less tidy maintenance of various county properties.	The public needs to understand what King County is doing to implement IPM and its range of impacts, from protecting fish and water quality to accepting a less manicured, more "natural" landscape. It should also explain how citizens can practice IPM in their own properties in order to protect themselves and their environment. This could include the creation of materials such as lawn signs and door hangers.
8. It has been a challenge finding all the right people in the county's many departments.	**8. Awareness of, and support, for IPM implementation is needed at all levels.**
In such a large organization as King County, with 13,000 employees, departments tend to run as isolated entities with little communication across boundaries. We now have participation from Parks, Transportation (Metro Transit and Road Services), Facilities Management (including the King County International Airport), Public Health, Development and Environmental Services, Finance (Procurement) and Natural Resources. All of these departments manage properties or rights-of-way, affect the management of those properties, or offer internal technical expertise.	Some department heads and middle levels of management don't have IPM on their radar screens and thus are not supportive of the needs for labor and other budget demands that come with such a change in practices. This is true even though the directive for IPM comes via an Executive Order.
9. Coordination is a good thing.	**9. The IPM Steering Committee should continue to monitor and coordinate IPM implementation.**
The King County IPM Steering Committee, made up of representatives from all affected departments or agencies, has been invaluable to moving IPM implementation forward within the county. It cuts across many	The committee should continue to play an important role in sharing information, ideas and resources and monitoring the success of the IPM strategy.

departments at a field staff level, sharing information and rolling up sleeves to address issues as they arise.	One valuable task for the committee would be to develop success criteria. We need to know if we are being successful in implementing our IPM strategy, and what else we need to do to adapt to changing circumstances.
10. Noxious and invasive weeds present special challenges.	**10. Continued exploration of noxious weed management techniques is needed.**
We are required by state law and local weed board mandates to manage certain species of plants for public health, economic and environmental reasons. King County's noxious weed program has had a strong IPM policy for years. Yet in many cases non-chemical control methods only go so far and use of certain herbicides, including some hazardous enough to be included on our "Tier 1" list, is still needed.	We need to continue to explore cultural options and less-hazardous chemical tools to manage noxious weeds while recognizing the challenge these weeds present.
11. Granting some exceptions has been essential.	**11. See #6, research is needed**
We want to develop the IPM program in a realistic and flexible manner, recognizing that some pest problems, such as control of wasps and noxious weeds, must be addressed with existing tools, even while we explore alternative approaches. The Tier 1 classification allowed us to "flag" the more hazardous pesticide products and allow their use, where essential, under careful management conditions.	Where practicable, safer chemical and non-chemical alternatives to Tier 1 pesticides should be explored.
12. Contractors working on county property present another challenge.	**12. Contractors working on county property need to follow the same mandate as county staff.**
IPM Steering Committee members worked to institute greater IPM approaches and reduce pesticide use by contractors working on county property. We recommended changes in contract language that will, over time, lead to reduced use of pesticides as contracts are renewed or new contracts let. For example, we recommended eliminating contract language that requires the regular use of weed-and-feed products on turf.	Those who manage these contracts need to review existing contract language for requirements related to landscape management. New contracts should include an IPM approach, and existing contracts should be amended if practical.
13. Sensitive areas, waterways, buffer zones and drainage systems present unique and as yet unresolved challenges.	**13. We should continue to communicate and share research and findings while we resolve these important challenges.**
How to prevent chemicals from reaching waterways, how to define boundaries, how close to the edge is OK, how to control invasive species in wetlands and riparian zones	Patience is required while the debate rages on.

– all of these and many more, related questions are being debated within King County's own operations as well as among local jurisdictions.	
14. IPM and especially pesticide-reduction mandates are controversial.	**14. Continued communication is needed about what we are doing and why.**
Industry misconceptions about the County's IPM policy and the Tier tables abound. Certain trade media have raised the specter of government interference with industry, confusion over who this policy applies to and whether such a policy will spell doom for landscapers, golf course managers and other businesses. The fact that it is an internal policy for county government practices is lost in the hype about the county "banning" critical tools. Some fear that King County's IPM policy will serve as a model for other jurisdictions, resulting in a wave of pesticide-reducing policies across Washington's landscape.	Some members of the landscape industry recognize the challenge presented by the ESA and by public concerns, and are taking their own steps to adopt IPM strategies and reduce pesticide use. We should continue to work with those being proactive while explaining our approach and strategies to others. We also need to continue to explore ways to keep IPM implementation practical.
15. Uncertainty remains about ESA restrictions on pesticide use and our IPM program.	**15. King County should stay informed about ongoing negotiations and participate when appropriate.**
It is not clear whether pesticide use will be considered "take" under the ESA. Even with the "final" 4(d) rule for Chinook salmon going into effect recently, issues remain unresolved surrounding even limited pesticide usage. We believe that King County's IPM program is sufficiently protective of the Chinook salmon and its habitat to not be considered "take." We believe that it is at least as protective as Portland Parks and Recreation's IPM program, which is recognized as exempt from "take" in the final 4(d) rule. We are concerned that ESA-imposed restrictions on pesticide use might further limit our efforts to restore essential streamside habitat from invasive plants such as purple loosestrife and Japanese knotweed.	The Washington State Department of Agriculture is negotiating with the U.S. EPA, National Marine Fisheries Service and Fish and Wildlife Service on the full spectrum of pesticide use and regulation related to ESA. Many thorny issues remain to be ironed out.

APPENDIX

TABLE 3
KING COUNTY IPM PROGRAM
REPORTED PESTICIDE USE IN 1999

PRODUCT	ACTIVE INGREDIENT	POUNDS	TIER	DIVISION(S) USING PRODUCT	APPLICATION METHOD	TYPE LANDSCAPE
Amitrol-T	Amitrole	1.4	T1	Transit	spot spray	not reported
Arsenal	Imazapyr	8.6	T1	Roads, Wastewater Treatment	truck, sprayer	gravel, rights-of-way, road edges, bare ground, cracks
Casoron	Dichlobenil	3100	T1	Airport, Solid Waste, Transit, Wastewater Treatment	hand drop, spreaders	beds
Copper Sulfate	Copper sulfate	50	not rated	Roads	shaker	under sidewalks
Cory's Slug/Snail	Carbaryl or metaldehyde	1.3	not rated	East Reclamation Plant	not reported	beds
Crossbow	Triclopyr; 2,4-D	150	T1	Airport, Transit, Wastewater Treatment	backpack & spot spray	beds, fencelines, taxiways
Dursban	Chlorpyrifos	39	T1	Airport, Roads	hand tank, spreader	rights-of-way, turf
Ecopco Jet	Eugenol; propionic acid ester	13	#not rated	Wastewater Treatment	aerosol spray	wasp nests
Enforcer	Fenothrin; tetramethrin	16	^T4	Wastewater Treatment	aerosol spray	wasp nests
Escort	Metsulfuron methyl	3.0	T1	Roads	injection spray truck	road shoulders
Finale	Glufosinate ammonium	1.0	T1	Wastewater Treatment	not reported	gravel
Fusilade	Fluazifpo-p burly	0.2	T1	Transit	spot spray	not reported
Garlon 3A	Triclopyr (amine)	71	T1	Parks, Roads, Wastewater Treatment	hand tank, truck, wick wand	beds, road shoulders, sports complex

TABLE 3 (cont)
KING COUNTY IPM PROGRAM
REPORTED PESTICIDE USE IN 1999

PRODUCT	ACTIVE INGREDIENT	POUNDS	TIER	DIVISION(S) USING PRODUCT	APPLICATION METHOD	TYPE LANDSCAPE
Garlon 4	Triclopyr (esther)	8.3	T2	Roads	hand tank	tree stumps
Manage	Halosulfuron methyl	29	T1	Airport	backpack spray	beds
No Mix Delete	Glysphosate; oryzalin	2.1	*T2	Wastewater Treatment	micro spray wand	beds
No Mix Sweep	Glysphosate	4.2	*T2	Wastewater Treatment	micro spray wand	bare ground, beds, gravel, road edges
Orthene	Acephate	2.3	T1	Wastewater Treatment	sprayer	beds
Ortho Ant Stop	Chlorpyrifos	4.2	*T1	Wastewater Treatment	spray	in and around buildings
Oust	Sulfometuron methyl	18	T2	Roads	injection spray truck	road shoulders
Roundup	Glyphosate	960	T2	Airport, Parks, Roads, Transit, Wastewater Treatment	hand tank, injection spray truck, spot spray	beds, fencelines, gravel, road shoulders, sports complex
Snapshot	Trifluralin; isoxaben	280	T1	Wastewater Treatment	granule spreader	beds
Sprakil SK-26	Diuron or tebuthiuron	3100	*T1	Roads	shaker	guard rails
Surflan	Oryzalin	42	T2	Airport	backpack spray	fenceline, taxiways
Transline	Clorpyralid	4.2	T1	Roads	hand tank	rights-of-way (nox weeds)
Vanquish	Dicamba	8.3	T1	Roads	hand tank	rights-of-way (nox weeds)
Weed & Feed	Varies, may contain 2,4-D; dicamba; MCPP	810	T1	Airport, Solid Waste, Transit	hand drop, broadcast spreader	turf, beds
XL 2G	Benefin; oryzalin	50	T2	Wastewater Treatment	granule spreader	beds

*Active ingredients on tier lists, product not on tier lists.
Contains minimum risk ingredients (EPA).
^ T4 products had insufficient data to evaluate.

TABLE 4
KING COUNTY IPM PROGRAM
REPORTED PESTICIDE USE IN 2000

PRODUCT	ACTIVE INGREDIENT	POUNDS	TIER	DIVISION(S) USING PRODUCT	APPLICATION METHOD	TYPE LANDSCAPE
Arsenal	Imazapyr	8.2	T1	Wastewater Treatment	not reported	not reported
Brush-B-Gone	Triclopyr	1.9	*T1	Noxious Weeds Program	spot spray	noxious weeds on residential property
Casoron	Dichlobenil	710	T1	Airport, Wastewater Treatment	acme spreader, by hand	beds, substations
Cool Power	MCPA; dicamba; triclopyr	13	*T1	Airport	sprayer: back pack	beds, fencelines
Crossbow	Triclopyr; 2,4-D	52	T1	Airport, Transit, Wastewater Treatment	sprayers: backpack, hand held, spotlyte	beds, fencelines, runways, taxiways, road shoulders
Devrinol 10G	Napropamide	230	T2	Wastewater Treatment	acme spreader	beds
Ecopco Jet	Eugenol; propionic acid ester	2.1	#not rated	Wastewater Treatment	aerosol	wasp nests
Escort	Metsulfuron methyl	1.0	T1	Roads	spray truck	road shoulders
Garlon 3A	Triclopyr (amine)	42	T1	Parks, Roads, Wastewater Treatment	sprayers: back pack, spotlyte	rights-of-way, noxious weeds, substations
Garlon 4	Triclopyr (esther)	200	T2	Roads	sprayers: back pack, spotlyte	tree stumps, noxious weeds
Malathion	Malathion	0.03	T1	Wastewater Treatment	sprayer	caterpillars in trees
Millenium	2,4-D, clorpyralid; dicamba	4.2	*T1	Transit	not reported	turf
Orthene	Acephate	0.5	T1	Airport	broadcast spreader	cypress tip moths in shrubs
Oust	Sulfometuron methyl	27	T2	Roads	spray truck	road shoulders

TABLE 4 (cont)
KING COUNTY IPM PROGRAM
REPORTED PESTICIDE USE IN 2000

PRODUCT	ACTIVE INGREDIENT	POUNDS	TIER	DIVISION(S) USING PRODUCT	APPLICATION METHOD	TYPE LANDSCAPE
Roundup	Glyphosate	850	T2	Airport, Parks, Roads, Transit, Wastewater Treatment	sprayers: backpack, hand held, spotlyte, truck	beds, fencelines, gravel, paving cracks, road shoulders, runways, taxiways
Snapshot 2.5 TG	Trifluralin; isoxaben	450	T1	Wastewater Treatment	acme spreader	beds
Surflan	Oryzalin	48	T2	Airport	sprayer: backpack	beds, fencelines, gravel, paving cracks, road shoulders, taxiways
Transline	Clorpyralid	25	T1	Roads	sprayers: backpack, spotlyte	rights-of-way (noxious weeds)
Trimec	2,4-D; 2,4-DP; dicamba	14	T1	Transit, Wastewater Treatment	sprayers: backpack, spotlyte	tree wells, turf
Vanquish	Dicamba	4.2	T1	Roads	sprayers: backpack, spotlyte	rights-of-way (noxious weeds)
Weed & Feed	Varies, may contain 2,4-D; dicamba; MCPP	1600	T1	Airport, Wastewater Treatment	broadcast spreader	turf
Weed-B-Gon	2,4-D; MCPP	0.8	T1	Noxious Weeds Program	Spot spray	noxious weeds on residential property
XL-2G	Benefin; oryzalin	97	T2	Wastewater Treatment	acme spreader	beds

*Active ingredients on tier lists, product not on tier lists.
Contains minimum risk ingredients (EPA).

KING COUNTY

EXECUTIVE ORDER
King County Administrative Policies and Procedures

November 5, 1999

An Executive Order requiring certain King County Departments, Offices, and Agencies to conduct pest and vegetation management activities in accordance with the Tri-County IPM Model Policy and supporting Guidelines.

An Executive Order requiring certain King County Departments, Offices, and Agencies to conduct pest and vegetation management activities in accordance with the Tri-County IPM Model Policy and supporting Guidelines, and in accordance with subsequent revisions thereto; designating the Local Hazardous Waste Management Program in King County as the lead agency and resource for Integrated Pest Management by such Departments, Offices, and Agencies; and requiring that such Departments, Offices, and Agencies phase out the use of certain specified materials by June 30, 2000.

* * * *

WHEREAS, pursuant to the federal Endangered Species Act ("ESA") and effective May 24, 1999, the Puget Sound Chinook Salmon Evolutionarily Significant Unit was listed as "threatened" by the National Marine Fisheries Service, and in the very near future the Puget Sound Bull Trout Evolutionarily Significant Unit will be listed as "threatened" by the United States Fish and Wildlife Service ("USFWS"); and

WHEREAS, the USFWS has promulgated a standing regulation that prohibits all "take" of a threatened species as of the date such a listing becomes effective, and the ESA provides civil and criminal penalties for violations of the ESA and regulations promulgated thereunder; and

WHEREAS, King County Executive Departments, Offices, and Agencies ("King County Agencies") should endeavor to comply with the ESA by minimizing the possibility of causing prohibited "take" of listed species such as the Puget Sound chinook salmon and the bull trout, and King County Agencies should set an example for businesses, other government entities, and citizens in King County to encourage actions that will promote the conservation of such listed species; and

WHEREAS, Integrated Pest Management ("IPM") uses a wide variety of strategies to prevent and address pest problems and to minimize the use of chemical pesticides, and representatives from local jurisdictions in King, Pierce, and Snohomish counties developed a model Tri-County IPM Policy and supporting Guidelines with the aim of reducing the potential impact of pesticide use on listed species such as the Puget Sound chinook salmon and the bull trout, and implementation of the model Tri-County IPM Policy and supporting Guidelines by King County Agencies will result in better long-term management of vegetation and pest problems in King County, and is likely to contribute to improvement in public health and the environment in King County, including but not limited to the habitat, food, and sensitive life stages of threatened chinook salmon and bull trout; and

WHEREAS, at the request of the City of Seattle, the Washington Toxics Coalition conducted a Preliminary Assessment of Pesticides Used by the City of Seattle and compiled prioritized tables of products to be phased out of use by the City of Seattle, and at King County's request subsequently compiled similar tables of products to be phased out of use by King County; and

WHEREAS, pursuant to King County Charter §320.20, the county executive shall have all the executive powers of the county which are not expressly vested in other specific elective officers by the charter, and shall supervise all administrative offices and executive departments established by the charter or created by the county council; and

WHEREAS, pursuant to King County Code §2.16.020(E)(8), the county executive may assign duties and functions to departments to ensure that the county complies with applicable state and federal

laws, regulations and requirements, so long as such duties and functions are not assigned to another department by the county charter or the county council; and
WHEREAS, matters concerning the internal management of county agencies do not constitute "rules" subject to the requirements of K.C.C. 2.98.010 et seq.;
NOW, THEREFORE, I, Ron Sims, King County Executive, hereby do order that the following King County Agencies implement the following internal priorities and procedures regarding IPM in order to comply with the ESA and regulations promulgated thereunder, and to improve public health and the environment in King County:

1. All King County Agencies that conduct pest and vegetation management activities in the course of their assigned duties shall develop Agency-specific IPM programs and conduct other related activities in accordance with the Tri-County IPM Model Policy and supporting Guidelines, dated August 12, 1999, which are attached to this Executive Order and incorporated herein by reference, and in accordance with any subsequent revisions of those or King County-specific documents as may be approved by the Local Hazardous Waste Management Program ("Hazardous Waste Program").
2. The Hazardous Waste Program shall be the lead agency within King County to coordinate, and offer technical assistance for, IPM implementation by King County Agencies that conduct pest and vegetation management activities in the course of their assigned duties. The Hazardous Waste Program shall assist all such King County Agencies to develop Agency-specific IPM programs.
3. King County Agencies shall coordinate implementation of Agency-specific IPM programs via a King County IPM Steering Committee, as described in the Tri-County IPM Model Policy. All King County Agencies that conduct pest and vegetation management activities in the course of their assigned duties shall participate in the King County IPM Steering Committee.
4. By June 30, 2000, all King County Agencies that conduct pest and vegetation management activities in the course of their assigned duties shall, to the maximum extent practicable, phase out use of the products listed in Tier 1 of Tables 1-4 attached to this Executive Order and incorporated herein by reference. The King County IPM Steering Committee and the Hazardous Waste Program shall assist such King County Agencies to phase out use of Tier 1 products in accordance with the Preliminary Assessment of Pesticides Used by the City of Seattle, attached to this Executive Order and incorporated herein by reference, as well as in accordance with the Tri-County Model IPM Policy and the supporting Guidelines.

DATED this 5th day of November, 1999.

Ron Sims
King County Executive
ATTEST:
Robert Bruce, Acting Manager King County Records and Elections Division

King County IPM Product Exception Request for 2000

Name _____ Phone # _____

Date_____

Department: _____

Pesticide Applicator Name: _____ Phone #_____

Site Name: _____

Site Address: _____

Name of product: _____

Send this form to: Ann Peacock
Mailstop: IHW-NR-0100
E-mail: ann.peacock@metrokc.gov
Snailmail: King County Hazardous Waste Management
130 Nickerson Street #100, Seattle, WA 98109
Phone: (206) 263-3088

Product exception request is:	**Product type:**	**Site type:**
□ One time only exception □ Programmatic exception (annual)	□ Herbicide □ Insecticide □ Fungicide	□ Ornamental □ Right-of-way □ Substation □ Trees/woody brush □ Turf □ Other _____

!!! ATTACH THE PRODUCT LABEL AND MSDS TO THIS FORM !!!

1) Describe the management goals and objectives for the site (e.g., safety, public access, screening, IPM strategy).

2) Describe the pest problem (examples: aphids resulting in complaints about honeydew on cars, blackberries requiring removal for restoration project). Please note if this is a noxious weed. Briefly describe the history of the problem. Does the surrounding area impact the site?

3) Describe the site conditions. Include the square footage to be treated, slope and wetness of site. Where is the site in relation to streams or bodies of water, storm drains, drainage ditches and/or impervious surfaces?

4) Describe the alternatives considered and why they were eliminated, including an analysis of Tier 2 and Tier 3 products and non-chemical and no-action alternatives. What are the costs associated with using the alternatives? What are the BMPs for this site?

5) What monitoring of the pest problem and potential pest predators (where applicable) have occurred? What control methods and IPM methods have been previously used at the site? How effective were they? If available, provide copies of spray logs, pictures, site map, and any other applicable records and documentation.

6) Describe how the product would be applied including the month(s) of application, the frequency of application, formulation, concentration, and the method of application.

For herbicide use: Will the area be replanted? Is there supplemental irrigation on the site? What is the time frame for replanting? Include a brief general description of the replanting project.

7) What kind of damage or impact will this problem cause at this site? Is it aesthetic, economic, environmental, legal, public, and/or others? Explain for each impact.